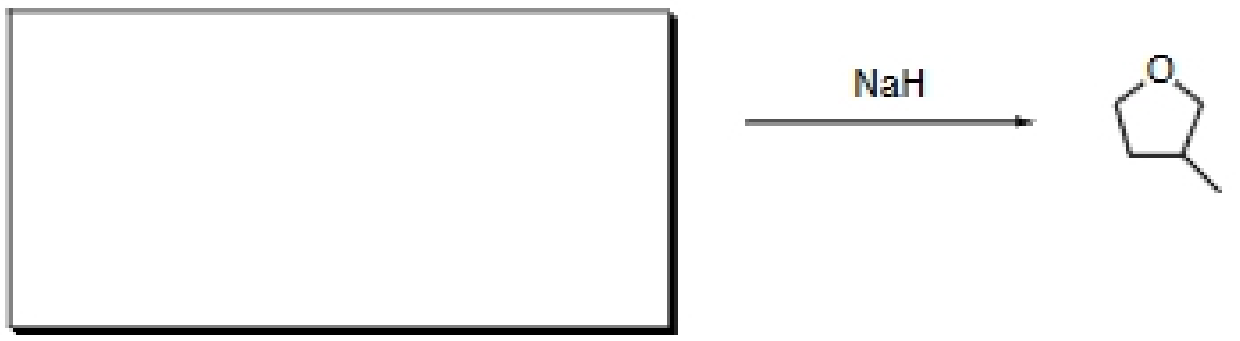
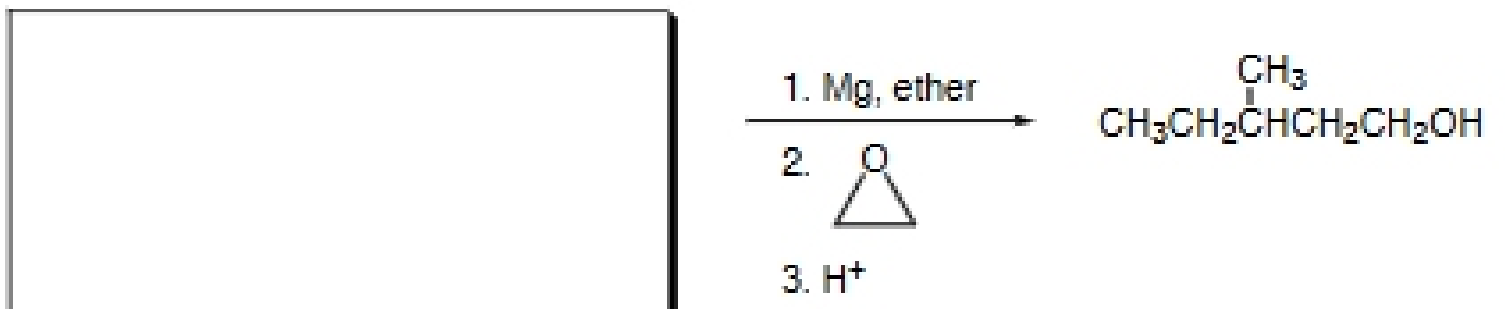
Chemistry 2212 **Organic Chemistry II** **Spring 2003**

Practice Midterm: covering material through the end of Chapter 13

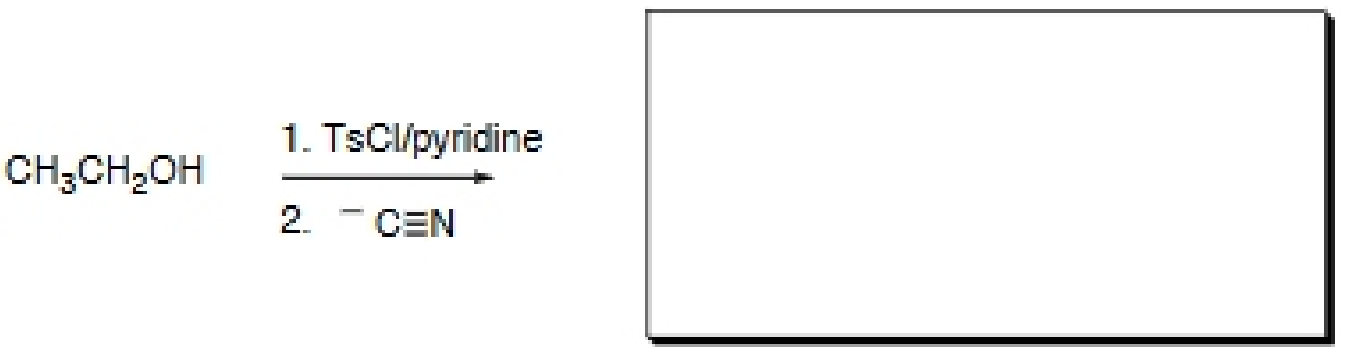
1. Fill in the missing organic reagents for the following transformations:

(a) 

(b) 

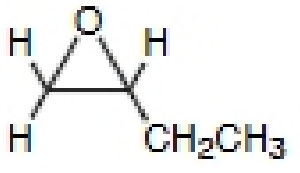
2. Predict the major organic product for the following transformations:

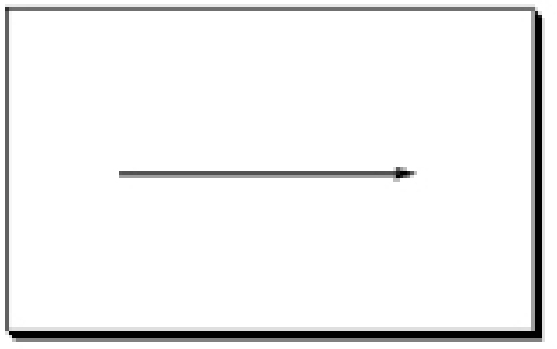
(a) 

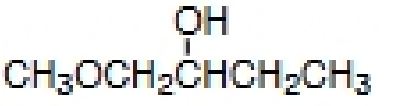
(b) 

3. Fill in the missing organic reagents for the following transformations:

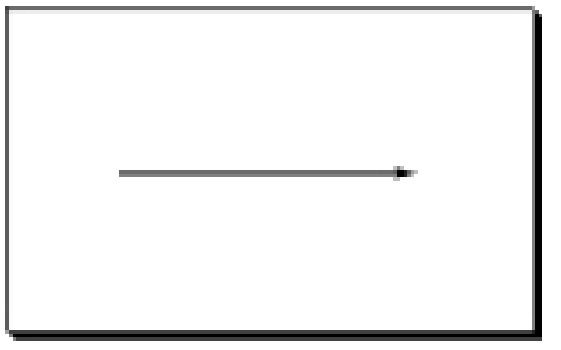
(a)

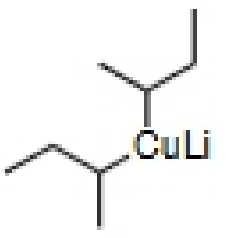




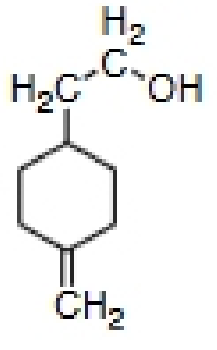


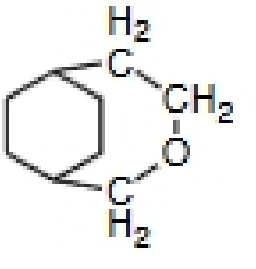
(b) 2





4. Using the given starting material, any necessary inorganic reagents, and any carbon-containing compounds with no more than two carbon atoms, indicate how the following synthesis could be carried out:





5. Methyl iodide is reacted with an unknown compound ("A") to give a new compound with molecular formula $C_4H_{11}N$. The ^1H NMR spectrum of the product "B" is given below.

   (a) Give the structures of reactant "A" and product "B".
   (b) Assign the ^1H NMR resonances in the below spectrum to the hydrogens in compound "B". The coupling information is:

   1.1 ppm – t, 3H
   2.2 ppm – s, 6H
   2.4 ppm – q, 2H